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## MEMORANDUM FOR EDITORS AND REPORTERS

Attached is a copy of a speech that James M. Beggs, Administrator of NASA, will deliver today to the Washington Chapter of the National Security Industrial Association. In it he discusses NASA's historic and current role in national security matters. The talk will be delivered at a luncheon in the Mayflower Hotel.

**Remarks Prepared for Delivery to  
National Security Industrial Association  
Washington, D.C., Chapter**

**Mayflower Hotel  
Washington, D.C.  
Noon  
Feb. 5, 1985**

**James M. Beggs**

**Administrator**

**The National Aeronautics and Space Administration**

THANK YOU, BOB (LOSEY), FOR THAT FLATTERING INTRODUCTION. IT BRINGS TO MIND THE LINE FROM SHAKESPEARE'S "AS YOU LIKE IT:" "THAT WAS LAID ON WITH A TROWEL." BUT I APPRECIATE ALL YOUR GOOD WORDS, AND AM DELIGHTED TO BE HERE.

MORE THAN 200 YEARS AGO, ANOTHER TOWERING LITERARY GENIUS, GOETHE SET DOWN THREE SIMPLE RULES FOR LITERARY CRITICISM. AND I BELIEVE THEY STILL APPLY. CRITICS, HE SAID, SHOULD ASK THREE QUESTIONS: WHAT HAS THE AUTHOR TRIED TO DO? HOW WELL HAS HE DONE IT? WAS IT WORTH DOING?

IF WE WERE TO ASK THESE QUESTIONS ABOUT ANY HUMAN ACTIVITY, MOST LIKELY WE WOULD FIND THEY PROVIDE A GOOD YARDSTICK TO MEASURE ITS EFFECTIVENESS AND IMPORTANCE. SO I WOULD LIKE TO BEGIN BY APPLYING THEM TO NASA'S CONTRIBUTIONS OVER THE PAST 26 YEARS.

THE LAW THAT CREATED THE AGENCY IN 1958 ESTABLISHED ROLES AND RESPONSIBILITIES FOR BOTH NASA AND THE DEPARTMENT OF DEFENSE IN CONDUCTING AERONAUTICAL AND SPACE RESEARCH AND DEVELOPMENT. NASA WAS TO CONCERN ITSELF WITH R&D FOR PEACEFUL PURPOSES AND ITS APPLICATION TO BENEFIT MANKIND. DOD WAS TO BE RESPONSIBLE FOR R&D RELATING TO THE NATIONAL DEFENSE.

THE LAW ALSO INSTRUCTED NASA TO MAKE ITS TECHNICAL RESOURCES AND RESEARCH FINDINGS OF MILITARY SIGNIFICANCE AVAILABLE TO DOD IN THE INTERESTS OF THE NATIONAL DEFENSE.

WE HAVE DONE ALL OF THESE THINGS. AND I BELIEVE THE PUBLIC, WHO ARE OUR STOCKHOLDERS, WOULD GENERALLY AGREE THAT WE HAVE DONE THEM WELL. NASA'S WORK HAS HAD FOUR MAJOR RESULTS.

FIRST, IT HELPED TO EXPAND, AT AN UNPRECEDENTED RATE, HUMAN KNOWLEDGE OF THE SOLAR SYSTEM AND THE UNIVERSE.

SECOND, IT SOLIDIFIED AMERICAN LEADERSHIP IN SPACE AND AERONAUTICAL TECHNOLOGIES AND THEIR APPLICATIONS.

THIRD, IT SPURRED OUR NATIONAL ECONOMIC GROWTH BY CREATING A HIGH TECHNOLOGY BASE SECOND TO NONE - A BASE WHICH SPAWNS NEW INDUSTRIES, NEW JOBS, NEW PRODUCTS, GREATER INNOVATION AND HIGHER PRODUCTIVITY.

FINALLY, IT MADE IMPORTANT CONTRIBUTIONS TO OUR NATIONAL DEFENSE AND NATIONAL SECURITY.

GIVEN THESE RESULTS TO DATE, WAS IT WORTH DOING? I'LL LEAVE THAT TO YOU TO JUDGE. I AGREE WITH PRESIDENT REAGAN, WHO SAID RECENTLY, "OUR INVESTMENT IN SPACE HAS BEEN ONE OF THE BEST INVESTMENTS WE'VE MADE AS A NATION."

WE ARE NOW PREPARING TO TAKE OUR NEXT LOGICAL STEP IN SPACE BY DEVELOPING A PERMANENTLY MANNED SPACE STATION, WHICH WILL BE OPERATING BY THE EARLY 1990s.

THE SPACE STATION WILL ALLOW US TO DO SCIENTIFIC AND INDUSTRIAL WORK IN SPACE ON A SUSTAINED BASIS. AND I BELIEVE THAT RESEARCH WILL PAY EVEN BIGGER DIVIDENDS IN THE FUTURE IN THE FOUR AREAS I HAVE JUST MENTIONED.

BUT LET ME EXPAND ON THAT FOURTH AREA - NASA'S CONTRIBUTIONS TO THE NATIONAL DEFENSE - BECAUSE I BELIEVE IT IMPORTANT TO GET THE FACTS INTO PERSPECTIVE.

NASA HAS JUST COMPLETED A SHUTTLE MISSION DURING WHICH A MILITARY PAYLOAD WAS LAUNCHED INTO SPACE. NOW, THERE IS NOTHING UNPRECEDENTED ABOUT MILITARY PAYLOADS BEING LAUNCHED INTO SPACE. THE SOVIETS AND WE HAVE BEEN DOING IT FOR MORE THAN TWO DECADES WITH EXPENDABLE LAUNCH VEHICLES. AND BOTH THEY AND WE GENERALLY MAKE IT A RULE NOT TO TALK TOO MUCH ABOUT THEM. SO, WHY THE FUSS IN THE MEDIA ABOUT THIS MISSION?

IT STEMMED, I BELIEVE, FROM THEIR MISAPPREHENSION THAT THE NATION'S CIVILIAN SPACE PROGRAM WAS ABOUT TO BE TAKEN OVER BY THE MILITARY. AS ONE NEWS ORGANIZATION PUT IT STERNLY: "THE LINE IS BEING CROSSED."

WELL, LET ME SET THE RECORD STRAIGHT. NOTHING COULD BE FURTHER FROM THE TRUTH. ON THE LAST MISSION WE DID WHAT WE ALWAYS TRY TO DO. AND THAT IS TO SATISFY OUR COMMERCIAL CUSTOMERS, BE THEY CIVILIAN OR MILITARY.

WE SUPPLY THE NECESSARY RESOURCES AND ASSETS THEY HAVE PAID US TO DELIVER. WE GIVE THEM THE SUPPORT THAT ALLOWS THEM TO DO THEIR JOB. WE KEEP THE NATURE OF THEIR PAYLOADS PROPRIETARY, IF THEY MAKE THAT A FLIGHT REQUIREMENT. WE'VE DONE THIS FOR COMPANIES, SUCH AS McDONNELL DOUGLAS AND JOHNSON AND JOHNSON AND FOR 3M, AS WELL AS FOR DOD. AND WE WILL CONTINUE TO DO IT IN THE FUTURE, FOR BOTH THE DOD AND OUR OTHER CUSTOMERS.

WE ALSO WILL CONTINUE TO COOPERATE WITH THE DEPARTMENT OF DEFENSE BY SHARING OUR RESEARCH RESULTS AND OTHER MAJOR ASSETS, AS WE HAVE IN THE PAST, AND AS CONGRESS DIRECTED US TO DO.

MANY OF YOU ARE AWARE OF NASA'S CLOSE WORKING RELATIONSHIP WITH DOD. IT HAS BEEN ONE OF STRONG SUPPORT AND COOPERATION THROUGH THE YEARS AND HAS RESULTED IN MANY BENEFITS FOR DOD. BUT FOR THOSE WHO MAY BE HAZY ON THE SUBJECT, LET ME REVIEW THE HISTORY OF THAT COOPERATION.

BACK IN THE OPENING YEARS OF WORLD WAR 1, IT WAS CLEAR THAT AIR POWER, HOWEVER PRIMITIVE, WAS BEGINNING TO PLAY AN IMPORTANT ROLE. IT WAS ALSO CLEAR THAT UNITED STATES' AIRCRAFT, BOTH IN NUMBERS AND IN TECHNOLOGY, DID NOT MEASURE UP TO THOSE OF EUROPEAN NATIONS.

THIS MAY COME AS A SHOCKER, BUT IN 1916, THE UNITED STATES ARMY OWNED ONLY 16 AIRCRAFT. AT THE SAME TIME, THE MAJOR EUROPEAN NATIONS EACH OWNED SEVERAL HUNDRED MORE. MANY HAD BUILT AIR FORCES OF BOTH LIGHTER- AND HEAVIER-THAN-AIR CRAFT IN THE PRE-WAR YEARS. THE UNITED STATES, MEANWHILE, HAD DONE LITTLE TO RETAIN THE TECHNOLOGICAL LEAD ESTABLISHED BY THE WRIGHT BROTHERS.

ON DECEMBER 8, 1914, BRIGIDIER GENERAL GEORGE P. SCRIVEN THEN THE ARMY'S CHIEF SIGNAL OFFICER, TESTIFIED BEFORE CONGRESS ON THE ARMY APPROPRIATIONS BILL FOR FISCAL YEAR 1916. HE WAS ASKED HOW THE UNITED STATES COMPARED WITH OTHER NATIONS IN AERONAUTICAL SPENDING AND REPLIED WITH FIGURES FOR THE LAST YEAR OF PRE-WAR BUDGETS. GERMANY, HE SAID, HAD APPROPRIATED \$45 MILLION; RUSSIA, \$22.5 MILLION; FRANCE, \$13 MILLION; AUSTRIA, \$3 MILLION; GREAT BRITAIN, \$1.8 MILLION AND ITALY, \$.8 MILLION. THE UNITED STATES, HE SAID, HAD APPROPRIATED \$250,000.

CLEARLY, WE WERE LAGGING BEHIND. AND AS THE GREAT WAR CONTINUED, A SMALL GROUP OF CONCERNED MEN, LED BY CHARLES D. WALCOTT, THE SECRETARY OF THE SMITHSONIAN INSTITUTION, WORKED HARD TO ALERT THE COUNTRY TO THE NEED TO CATCH UP WITH THE EUROPEANS. THEY FINALLY SUCCEED, AND IN 1915, CONGRESS AND THE PRESIDENT CREATED THE NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS.

THE COMMITTEE CONSISTED OF 12 PRESIDENTIAL APPOINTEES DRAWN FROM THE MILITARY AND SCIENTIFIC SIDES OF GOVERNMENT AND FROM THE SCIENTIFIC COMMUNITY AT LARGE. THEY SERVED WITHOUT PAY AND THEIR CHARGE WAS MIND-BOGGLING, CONSIDERING THE PRIMITIVE AND UNORGANIZED STATE OF AMERICAN AERONAUTICS. THEY WERE TO "SUPERVISE AND DIRECT THE SCIENTIFIC STUDY OF THE PROBLEMS OF FLIGHT, WITH A VIEW TO THEIR PRACTICAL SOLUTION;" AND TO "DIRECT AND CONDUCT RESEARCH AND EXPERIMENTS IN AERONAUTICS."

ONE OF THE COMMITTEE'S FIRST TASKS WAS TO BUILD AN AERONAUTICAL RESEARCH LABORATORY TO COORDINATE AND COLOCATE THE RESEARCH FACILITIES OF THE ARMY, NAVY AND THE COMMITTEE. A THREE-BUILDING COMPLEX, WAS COMPLETED AT HAMPTON, VIRGINIA IN 1920. IT INCLUDED A WIND TUNNEL WITH A 1.5 METER TEST SECTION. THE COMPLEX WAS CALLED THE LANGLEY MEMORIAL AERONAUTICAL LABORATORY, AFTER SAMUEL P. LANGLEY, THE AERONAUTICAL PIONEER.

AT LANGLEY, NACA LITERALLY INVENTED THE SCIENCE OF AERONAUTICS. TO GIVE YOU AN IDEA OF THE ENORMITY OF THAT TASK, LET ME READ YOU A QUOTE FROM DR. JEROME C. HUNSACKER, ONE OF THE EARLY AERONAUTICAL ENGINEERING PIONEERS, WHO DIED LAST SEPTEMBER AT THE AGE OF 98. HE WAS REMINISCING ABOUT THE DIFFICULTIES OF CREATING THE FIRST COLLEGE COURSE IN AERONAUTICAL ENGINEERING AT MIT., AND THIS IS WHAT HE SAID.



"IN THE BEGINNING, IT WAS NOT POSSIBLE TO TEACH THE PRINCIPLES OF AERONAUTICAL ENGINEERING BECAUSE NONE OF US KNEW THEM. THE PRINCIPLES HAD TO BE DISCOVERED, WHICH MEANT THAT WE HAD TO INVESTIGATE THE DIFFICULTIES OF THE PAST, COLLECT A LOT OF FACTS, AND THEN, AFTER FINDING THE MEANING OF THE FACTS, DETERMINE THE ENGINEERING PRINCIPLES OF FLIGHT."

THAT WAS NACA'S TASK AS WELL, AND THE COMMITTEE CONTINUED TO MAKE VITAL CONTRIBUTIONS TO OUR MILITARY AERONAUTICAL CAPABILITIES RIGHT ON THROUGH WORLD WAR II. IN 1944, NAVY SECRETARY FRANK KNOX MADE A SPEECH IN WHICH HE CREDITED OUR VICTORY AT THE CRUCIAL BATTLE OF MIDWAY IN 1943, TO AIRCRAFT INCORPORATING NACA-DEVELOPED TECHNOLOGY. THAT TECHNOLOGY, HE SAID, WAS AS IMPORTANT TO THE VICTORY AS THE CONTRIBUTIONS OF THE COURAGEOUS NAVAL AVIATORS.

AFTER THE WAR, NACA AND THE MILITARY CONTINUED TO COLLABORATE, NOTABLY ON THE X - SERIES AIRCRAFT AND ON ROCKET TECHNOLOGY.

WITH THE CREATION OF NASA, THAT COOPERATION INTENSIFIED. NASA IS INDEBTED TO THE AIR FORCE FOR PROVIDING ITS EARLY LAUNCH NEEDS. ALL OF OUR BOOSTERS, WITH THE EXCEPTION OF THE SCOUT AND SATURN ROCKETS, HAD THEIR ROOTS IN BALLISTIC MISSILES, AND DOD HAS USED THE SCOUT, WHICH WAS DEVELOPED BY NASA, MANY TIMES FOR ITS OWN PURPOSES.

OVER THE YEARS, CIVILIAN AND MILITARY PERSONNEL FROM DOD HAVE PLAYED IMPORTANT ROLES IN MANY NASA PROGRAMS. THE APOLLO PROGRAM WAS DIRECTED BY AN AIR FORCE GENERAL, SAM PHILLIPS. AND JIM ABRAHAMSON, ANOTHER AIR FORCE GENERAL, DIRECTED OUR SPACE SHUTTLE PROGRAM UNTIL LAST YEAR, WHEN HE WAS ASSIGNED TO DIRECT THE PRESIDENT'S STRATEGIC DEFENSE INITIATIVE.

MANY OF THE EARLY ASTRONAUTS WERE FORMER MILITARY PILOTS. INDEED, DURING THE MERCURY, GEMINI AND APOLLO YEARS, THERE WERE HEAVY ASSIGNMENTS OF DOD FOLKS TO NASA - MORE THAN 200 FROM 1963 TO 1970, AND MORE THAN 300 DURING 1967 AND 1968.

TODAY, INCLUDING THE MILITARY ASTRONAUTS, ALMOST 100 MILITARY DETAILEES WORK AT NASA, MOSTLY AT THE JOHNSON SPACE CENTER IN HOUSTON.

WE HAVE SHARED OTHER ASSETS. THE LAUNCH FACILITIES AT THE KENNEDY SPACE CENTER WERE FIRST BUILT BY THE AIR FORCE, THEN MODIFIED FOR NASA'S USE. THE NAVY OPERATED THE RECOVERY OPERATIONS FOR US FOR THE MERCURY, GEMINI, APOLLO AND SKYLAB PROGRAMS. AND THE NASA-DEVELOPED GEMINI SPACECRAFT, WITH MODIFICATIONS, WAS TO HAVE BEEN A KEY ELEMENT IN THE AIR FORCE'S MANNED ORBITAL LABORATORY PROGRAM, BEGUN IN THE MID-1960S.

TODAY, PRACTICALLY ALL AEROSPACE TECHNOLOGY THE MILITARY EMPLOYS STEMS FROM A NASA-DEVELOPED TECHNOLOGY BASE. THIS INCLUDES AIRCRAFT, AIRCRAFT SYSTEMS, AND SATELLITES FOR COMMUNICATIONS, METEOROLOGY, NAVIGATION AND REMOTE SENSING. WE HAVE HELPED TO EXPAND THE OPERATIONAL FLIGHT ENVELOPE, AND WILL HELP TO EXPAND IT STILL FURTHER AS SUCH SHUTTLE-RELATED TECHNOLOGIES AS FLY-BY-WIRE ARE INTEGRATED INTO BOTH MILITARY AND CIVILIAN AIRCRAFT.

INDEED, NASA AND DOD'S COOPERATIVE EFFORTS ON THE SHUTTLE PROGRAM SRETCH BACK TO 1969. THAT WAS THE YEAR PRESIDENT NIXON ESTABLISHED THE MULTI-AGENCY SPACE TASK GROUP TO COME UP WITH OPTIONS FOR NATIONAL GOALS IN SPACE AFTER APOLLO. NASA AND DOD WORKED TOGETHER WITHIN THE GROUP TO DEVELOP CONCEPTS AND REQUIREMENTS FOR A NEW NATIONAL SPACE TRANSPORTATION SYSTEM. THOSE PLANS WERE TO CULMINATE MORE THAN A DECADE LATER IN THE SPACE SHUTTLE AND ITS RELATED SYSTEMS.

INCIDENTALLY, THE STG ALSO RECOMMENDED THAT THE SHUTTLE BE DEVELOPED TOGETHER WITH A SPACE STATION, FOR A COMPLETE MAN-IN-ORBIT SYSTEM. BUT, BECAUSE OF BUDGETARY CONSTRAINTS, IT WAS DECIDED TO DEVELOP THE SHUTTLE FIRST.

NASA AND DOD'S DESIGNATED AGENT, THE AIR FORCE, WORKED CLOSELY ON ALL PHASES OF SHUTTLE DEVELOPMENT, INCLUDING PLANNING THE VANDENBERG AIR FORCE SHUTTLE FACILITIES AND UPPER STAGE SHUTTLE REQUIREMENTS. TODAY, OUR ARRANGEMENTS GIVE DOD PRIORITY ON THE SHUTTLE MANIFEST FOR MISSIONS INVOLVING THE NATIONAL SECURITY.

ON JULY 4 1982, PRESIDENT REAGAN ISSUED HIS NATIONAL SPACE POLICY, WHICH GAVE US A FRAMEWORK ON WHICH TO BUILD A VIGOROUS AND FAR-SIGHTED SPACE PROGRAM FOR THE FUTURE. ONE OF THE POLICY'S KEY GOALS IS TO STRENGTHEN OUR NATIONAL SECURITY BY EXPLORING NEW METHODS TO KEEP THE PEACE THROUGH CONTINUED CIVIL AND MILITARY COOPERATION IN SPACE, AND THROUGH "EFFICIENT AND EFFECTIVE USE OF NATIONAL RESOURCES."

THE SHUTTLE HAS PROVED TO BE A VALUABLE NATIONAL RESOURCE. FROM APRIL 1981 THROUGH NOVEMBER 1984, WE FLEW 14 MISSIONS, AN AVERAGE OF ONE PER QUARTER. THIS YEAR WE WILL BE FLYING A DOZEN MISSIONS, AN AVERAGE OF ONE A MONTH. THAT'S AN INCREASE OF 200 PER CENT IN OUR FLIGHT RATE. IT REFLECTS BOTH INCREASED EFFICIENCY AT OUR GROUND FACILITIES AND THE NEED TO ACCOMMODATE OUR GROWING LIST OF CUSTOMERS.

WE HOPE TO BUILD THE FLIGHT RATE UP TO TWO MISSIONS A MONTH BY 1986. AND BY THE END OF THE CENTURY WE EXPECT TO BE FLYING UP TO 40 MISSIONS A YEAR.

EACH TIME WE FLY, WE LEARN. AND WE WOULD LIKE DOD TO CONTINUE TO FLY AND LEARN WITH US.

BY THE EARLY 1990S, WE EXPECT TO HAVE A PERMANENTLY MANNED SPACE STATION OPERATING IN ORBIT. THE STATION WILL GIVE US A BASE TO REFINE OUR TECHNOLOGIES, TO EXPERIMENT IN THE SAME WAY WE DO ON EARTH, TO REPAIR AND REFURBISH SATELLITES AND TO FURTHER EXPLORE THE SOLAR SYSTEM AND THE UNIVERSE.

IT WILL PERMIT US TO DO ALL THE THINGS WE ARE DOING NOW IN SPACE IN NEW AND MORE SOPHISTICATED WAYS, AND PROBABLY MANY THINGS WE HAVE NOT YET THOUGHT OF.

FOR EXAMPLE, IT IS CONCEIVABLE THAT WE WILL BE ABLE TO USE THE STATION TO PUT TOGETHER A VERY LARGE ANTENNA, OR ANTENNA FARMS, WHICH, WHEN BOOSTED INTO GEOSYNCHRONOUS ORBIT, WOULD GIVE US PERSONAL COMMUNICATIONS CAPABILITIES WORLDWIDE. THE IDEA WOULD BE TO CARRY AROUND A TRANSCEIVER, PERHAPS SOMETHING LIKE THE OLD DICK TRACY WRIST RADIO, THROUGH WHICH YOU COULD REACH ANYONE ON EARTH WITH A SIMILAR DEVICE.

THIS CONCEPT AND OTHER NEW AND IMAGINATIVE OPPORTUNITIES CAN ONLY BE REALIZED WITH A MANNED SPACE STATION. AND I BELIEVE THAT WHEN THE SPACE STATION IS OPERATING, DOD WILL WANT TO USE IT TO DO A VARIETY OF THINGS.

IN THE FUTURE, DOD MIGHT EVEN WANT TO BUILD ITS OWN SPACE STATION IN POLAR ORBIT TO COMPLEMENT NASA'S, WHICH WILL BE IN EQUATORIAL ORBIT.

I DO NOT WANT TO GIVE THE IMPRESSION THAT DOD HAS BEEN WILDLY ENTHUSIASTIC ABOUT PARTICIPATING IN THE SPACE STATION PROGRAM. THAT WOULD BE EXAGGERATING. AND I'VE BEEN TRYING NOT TO DO THAT SINCE I SAW SOME GRAFFITO WRITTEN ON A PARIS WALL. IT SAID: "TO EXAGGERATE IS TO BEGIN TO INVENT."

SO FAR, THE DEPARTMENT HAS BEEN SAYING THAT THEY SEE NO MILITARY USE FOR A MANNED SPACE STATION. BUT I EXPECT THAT EVENTUALLY THEY WILL SEE MANY USES FOR ONE. THEY WILL WANT TO GET ON BOARD, TOGETHER WITH OTHERS, IN AND OUT OF GOVERNMENT, WHO BELIEVE THE STATION WILL TURN OUT TO BE A VALUABLE NATIONAL RESOURCE, MUCH AS THE SHUTTLE IS TODAY.

MANY OF YOU HAVE WORKED WITH NASA IN THE PAST, AND INDEED, ARE WORKING WITH US NOW. YOU KNOW OUR CAPABILITIES. YOU KNOW THAT WE RUN AN OPEN PROGRAM. AND YOU KNOW THAT OUR DOORS ARE ALWAYS OPEN TO HELP YOU DO YOUR JOB.

I URGE YOU TO REEXAMINE YOUR COMPANIES' WORK FOR DOD. THEN COME IN AND LOOK AT OUR PROGRAM AND OUR PLANS. VISIT US AT HEADQUARTERS AND GO OUT TO OUR FACILITIES AROUND THE COUNTRY AND TALK TO OUR ENGINEERS AND SCIENTISTS.

WE CAN PROBABLY ASSIST YOU IN WHAT YOU ARE DOING FOR DOD, IF WE ARE NOT DOING SO ALREADY. AND WE CAN HELP YOU IN DEVELOPING IDEAS FOR SPACE-BASED PRODUCTS OR SERVICES WITH COMMERCIAL POTENTIAL. WE ARE PUSHING HARD TO DEVELOP THE COMMERCIAL USE OF SPACE, WHICH PRESIDENT REAGAN HAS MADE A HIGH NATIONAL PRIORITY. AND WE WILL DO ALL WE CAN TO EASE INDUSTRY'S ENTRY INTO ORBIT, AND TO ENSURE THAT BUSINESS GET'S A FAIR SHAKE IN THE PROCESS.

FINALLY, LET ME SAY THAT WE ARE FORTUNATE TO LIVE IN A FREE NATION THAT ALLOWS US TO GO AS HIGH AS OUR IMAGINATIONS AND ASPIRATIONS WILL TAKE US. THROUGHOUT OUR HISTORY WE HAVE SOUGHT TO KNOW THE UNKNOWN. BUT WHILE WE HAVE KEPT OUR EYES ON THE STARS, WE HAVE KEPT OUR FEET ON THE GROUND. THIS UNIQUE BLEND OF VISION AND PRAGMATISM, I BELIEVE, IS WHAT HAS KEPT US GROWING AND PROSPEROUS.

OUR CHALLENGE IS TO CONTINUE TO WORK TOGETHER TO SECURE OUR FUTURE, ON EARTH AND IN SPACE. AND IF WE WERE TO ASK OURSELVES, WITH GOETHE, "IS IT WORTH DOING?" WE WOULD FIND THE ANSWER, I BELIEVE, IN HIS OWN WORDS.

"MAKE GOOD THY STANDING PLACE, AND MOVE THE WORLD", HE WROTE.

LET'S KEEP THOSE WORDS IN MIND AS WE WORK TOGETHER TO MOVE THE WORLD FORWARD ACROSS THE ENDLESS FRONTIER OF SPACE AND TO REAP ITS BOUNTIES FOR ALL MANKIND.

THANK YOU VERY MUCH.